

ABSTRACT OF THE DISCLOSURE

Device for enhancing cooling of electronic circuit components that is substantially or fully independent of orientation. A thin profile thermosyphon heat spreader mounted to an electronics package comprises a central evaporator in hydraulic communication with a peripheral condenser, both at least partially filled with liquid coolant. A very high effective thermal conductivity results. Performance is optimized by keeping the evaporator substantially full at all orientations while leaving a void for accumulation of vapor in the condenser. A cover plate and a parallel base plate of generally similar dimension form the evaporator and condenser. Optionally, an opening in the base plate is sealed against the electronics package and places the heat-dissipating component in direct contact with the liquid coolant. Alternatively, the base plate may be formed with the electronics package from a single piece of material. A boiling enhancement structure is provided in the evaporator to encourage vapor bubble nucleation.